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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/811,735	03/29/2004	Edward Barocela	038190/274032	1685
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ALSTON & BIRD, LLP BANK OF AMERICA PLAZA 101 SOUTH TRYON STREET, SUITE 4000 CHARLOTTE, NC 28280-4000				
EXAMINER				
DINH, TIEN QUANG				
ART UNIT		PAPER NUMBER		
3644				
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07/11/2008		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/811,735

**Applicant(s)**

BAROCELA, EDWARD

**Examiner**

Tien Dinh

**Art Unit**

3644

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 27 March 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,2,5-17,21,22,29 and 30 is/are pending in the application.
- 4a) Of the above claim(s) 14 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,5-13,15-17,21,22,29 and 30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, 5-6, 9, 10, 16, 17, 21, 22, and 29-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over MacConochie et al 5031857 in view Chen 6601795.

MacConochie et al discloses a transonic aircraft 26, 26 but clearly can be used as a "missile" (see Kamikaze in WW 2). The missile has a fuselage, wing actuator (column 4, lines 47-50), engine 61, oblique wing 42, 44 (aspect ratio of less than 7, see figure 5) that that can be swept to less than 90 degrees or at an angle of 30 to 40 degrees (see column 4, lines 66-column 5, lines 1-5) and mounted to the fuselage member proximate to the midpoint of the wing (see figure 8). The aircraft can fly to Mach 0.9 for at least 30 minutes with lots of fuels in the aircraft. During the initial stage of flight (see figures 2-4) when the engine is not initiated, the wing member is aligned with fuselage and is in a stationary position. Please note that the term "wherein" in claim 1 is intended use and carries no patentable weight. Re claim 16, "wherein" is intended use also and carries no patentable weight. Plus, the aircraft 26 is attached to mothership 22 at the initial stage of launch when the vehicle system goes from zero velocity to higher

velocity such as Mach 0.5 or lower. This means that the wing members are aligned with the fuselage member at less than transonic speed.

MacConochie et al is silent on wing member on the lower surface of the fuselage. However, Chen discloses wings that are on the top and lower part of the fuselage and the wing chord length being less than a diameter of the fuselage is well known (see figure 11A, 11B). The lower wing has the ability to be rotated to produce a sweep wing of less than 90 degrees at transonic speed. It would have been obvious to one skilled in the art at the time the invention was made to have used a lower wing having chord length less than the diameter of the fuselage in MacConochie et al's system as taught by Chen to have the predictable result of increased maneuverability at high speed.

Re claims 29-30, concerning the ratio of 3:2 and 7:2, the applicant has not provided any criticality to these ratios. A person skilled in the art at the time the invention was made to have used these ratios as a design choice to have the predictable result of having increase aerodynamic efficiency/maneuverability at high speed.

Claims 1, 2, 5-6, 8-10, 16, 17, 21-22, and 29-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Groutage et al 4842218 in view of Smith 5992796 and Chen 6601795.

Groutage et al teaches a missile that has a fuselage member, engine (that is capable of thrusting to transonic speed, see column 3, lines 24-25. Please note that cruise missiles are capable of supersonic flight), wing actuator that pivotally adjust the wing 40 (attached to the upper part of the fuselage, see figures) that is aligned with the fuselage and swings out to a deployed position. The midpoint 42 of the wing is where the wing is attached to the fuselage.

Groutage et al is silent on the wings being oblique/less than 90 degrees at transonic flight. However, Smith teaches that oblique wings 20 that are controlled via actuator 22 to have the wings at an angle of less than 90 degrees are well known and has certain aerodynamic advantages when flying at certain speed are well known in the art. Please note that the term "wherein" in claim 1 is intended use and carries no patentable weight. Re claim 16, "wherein" is intended use also and carries no patentable weight. Groutage et al teaches a missile that the wing being capable of being aligned with the fuselage member at less than transonic speed also and the wing can be swingable outward about 30-40 degrees at transonic speed.

It would have been obvious to one skilled in the art at the time the invention was made to have used oblique wings that are controlled by the actuators that allow the wings to be rotated at a certain angle during flight in place of Groutage et al's system as taught by Smith to allow the aircraft to have increased maneuverability and fuel efficiency since the oblique wings are rotated relative to the fuselage.

Although, it is not disclosed, the wings of Groutage et al appear to have an aspect ratio of less than 7.0. Plus, wings having aspect ratio of less than 7.0 are well known in this day and age that one skilled in the art can use to make the missile operate more efficiently at certain speed and for certain sized/shaped missile. Applicant has not challenged this in any response.

Re claims 5 and 16, the wing sweeps at angle of 30 to 40 degrees during the deployment if desired. One skilled in the art would have made the wings swept at an angle of 30 to 40 degrees at certain speed to allow maximum maneuverability and increase efficiency such as reducing fuel, drag, etc. This arrangement yields said predictable results.

Re claim 8, it is obvious to one skilled in the art to have the fuselage member any size since this merely involves routine steps one skilled in the art would have taken to accomplish certain missions that do not require bigger missiles. This arrangement yields said predictable results.

RE claim 9, please note that Chen teaches a transonic missile. A person skilled in the art would have made the missile of Groutage et al have the ability to travel at supersonic speed to reach its destination faster.

The transonic flight for at least 30 minutes is a design step one skilled in the art would have taken to allow the missile to hit the target quickly and efficiently.

Re claim 16, Groutage et al's missile can be configured to be releasably attached to an aircraft.

Concerning the amended claims, Groutage et al is silent on wing member on the lower surface of the fuselage and the chord length is less than a diameter of the fuselage member. However, Chen discloses wings that are on the top and lower part of the fuselage and the wing chord length being less than a diameter of the fuselage is well known (see figure 11A, 11B). The lower wing has the ability to be rotated to produce a sweep wing of less than 90 degrees at transonic speed. It would have been obvious to one skilled in the art at the time the invention was made to have used a more controllable lower wing having chord length less than the diameter of the fuselage in Groutage et al's system as taught by Chen to have the predictable result of increased maneuverability at high speed.

Re claims 29-30, concerning the ratio of 3:2 and 7:2, the applicant has not provided any criticality to these ratios. A person skilled in the art at the time the invention was made to have

used these ratios as a design choice to have the predictable result of having increase aerodynamic efficiency/maneuverability at high speed.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Groutage et al 4842218 as modified by Smith 5992796 and Chen 6601795, as applied to claim 1 above, and further in view of Abell 4132374.

Groutage et al as modified by Smith and and Chen 6601795 disclosed all claimed parts except for the one-quarter chord attachments. However, Abell teaches such attachment length. It would have been obvious to one skilled in the art to have attached Groutage et al's wings at one-quarter chord as taught by Abell so that the missile can have certain flight characteristic due to the quarter mounting to make the aircraft more maneuverable and more stable. The applicant has not included the criticality of such claimed subject.

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Groutage et al 4842218 as modified by Smith 5992796 and and Chen 6601795, as applied to claim 1 above, and further in view of admitted prior art on page 7 or Harris et al.

Groutage et al 4842218 as modified by Smith 5992796 and and Chen 6601795 discloses all claimed parts except for the use of snubbers. However, the admitted prior art or Harris et al teaches that snubbers are well known to be used to reduce vibrations.

It would have been obvious to one skilled in the art at the time the invention was made to have used snubbers in Groutage et al's system as taught by admitted prior art on page 7 or Harris et al to reduce vibration.

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Groutage et al 4842218 as modified by Smith 5992796 and Chen 6601795, as applied to claim 1 above, and further in Fink et al 2423090.

Groutage et al 4842218 as modified by Smith 5992796 discloses all claimed parts except for the antenna that is within the wing and is substantially along the entire length of the wing. However, Fink et al teaches that an antenna that spans substantially the length of the wing.

It would have been obvious to one skilled in the art at the time the invention was made to have used an antenna that is attached to substantially the entire length of the wing in Groutage et al's system as taught by Fink to receive and transmit data if need be.

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Groutage et al 4842218 as modified by Smith 5992796 and Chen 6601795, as applied to claim 1 above, and further in view of Cohn 2732656.

Groutage et al 4842218 as modified by Smith 5992796 and Chen 6601795 discloses all claimed parts except for the wound, spring-loaded actuator. However, Cohn teaches that wound, spring-loaded actuators are well known to pivot an object.



It would have been obvious to one skilled in the art at the time the invention was made to have used wound, spring-loaded actuators in Groutage et al's system as modified by Smith and as taught by Cohn as a substitution of parts to allow a more resilient actuator to pivot the wing.

Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Groutage et al 4842218 as modified by Smith 5992796 and Chen 6601795, as applied to claim 1 above, and in further view of Schroppel.

Groutage et al 4842218 as modified by Smith 5992796 and Chen 6601795 discloses all claimed parts except for fins being pivotable. However, Schroppel teaches fins that pivot at the end of the fuselage are well known.

It would have been obvious to one skilled in the art at the time the invention was made to have Groutage's fins pivot as taught by Schroppel to make the missile more maneuverable.

### ***Response to Arguments***

The examiner has used Chen 6601795 to teach that a lower wing attached to the bottom part of the fuselage is well known. A person skilled in the art would have added another wing (attached to the bottom portion of the fuselage) in MacConochie et al's system as taught by Chen to increase lift and maneuverability. The examiner disagrees that the aircraft 26 would not be able to land if there was a wing on the lower fuselage. In figure 7, a second wing at the bottom fuselage (in this case, the wing would perpendicular to the fuselage) can allow the aircraft to land. Plus, the claims do not call for the missile being able to land. Hence, a second wing at the bottom meets what has been claimed.

Concerning the Groutage reference, the applicant argues that since Groutage wants his upper wing to have a large chord design that a person skilled in the art would not have used another wing below the fuselage. This argument is not persuasive since adding another wing below the fuselage of Groutage is not teaching away from Groutage. Plus, the examiner has used Chen '795 to teach two wings (one being at the bottom) is well known. The wing also has a "smaller" chord length for high speed maneuverability. A person skilled in the art would have used a second wing with a smaller chord length in Groutage's system for increased maneuverability. The applicant also argued that Groutage doesn't mention transonic speed. The examiner points out that to make an aircraft go faster as taught by Chen is well known. This meets what has been claimed.

### *Conclusion*

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tien Dinh whose telephone number is 571-272-6899. The examiner can normally be reached on 12-8.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Mansen can be reached on 571-272-6608. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Tien Dinh/  
Primary Examiner, Art Unit 3644